

Aluminium extrusion solves design challenge



A well established UK motor drive company approached BAL Group as they were dissatisfied with their existing supplier in terms of lead time, quality, service and price.

At the time the customer was using a very large braised fin heatsink which due to the braising process was expensive to produce and fragile due to the material being soft after the braising process: braising softens any “after treatment” used to harden aluminium and is also aggressive to the surface and causes pitting.

BAL Group was asked to quote for a substitute, initially to get cost out of the product, but also BAL Group needed to offer an alternative production method as the company don't offer a braising facility.

BAL chose to offer an extruded version of the product which was 350mm wide, 100mm high with a close fin ratio and potentially an extremely difficult heatsink to extrude.

BAL Group took up the challenge and designed the heatsink to suit its thermal performance requirements but also bearing in mind the capabilities of the aluminium extrusion process.

As Stefan Kucharczyk, Managing Director of BAL Group says, “Our customer almost challenged us to be able to deliver to their specifications due to the size, and complexity of the design of the extrusion and the fact that the weight needed to be kept as low as possible.”

He adds, “Part of the challenge was to provide in the set of 7 machined heatsinks, a heatsink that was 546mm wide x 100mm high. To produce this we used the new profile which was cut to width and friction stir welded (FSW) which then solved the problem of the width.”

BAL Group funded the development of the aluminium extrusion as they were confident that their theoretical thermal calculations were correct and they would be able to deliver a product that met the customer's desired specifications. This not only included a cost saving in excess of 40% of ongoing costs, but also a product with an improved overall appearance.

The relationship between the two companies continues based on the BAL Group ethos of supplying a product that meets the highest standards and arrives on time, every time to a customer's scheduled requirements. BAL Group is proud of their commitment to customer services and aim to not only meet, but exceed their customer's expectations.